

LISTING OF CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

1-15. (Canceled)

16. (Currently Amended) A method of making an optical device, comprising:
- (a) providing a perfluorocyclobutyl-based copolymer composition having a solids content of greater than 50%,
 - (b) coating the perfluorocyclobutyl-based copolymer composition upon a substrate to form a first film, [[and]]
 - (c) thermally curing the first film to form a thermoset film, in which the thermoset film comprises a substantially transparent polymeric core of an optical waveguide, and
 - (d) coating a second composition on the outer surface of the first film to form a second film, in which the second film is a clad of the optical waveguide.

17. (Canceled)

18. (Currently Amended) The method of claim 16 ~~comprising the additional step of applying cladding comprising a~~ wherein the second composition comprises a second perfluorocyclobutyl-based copolymer to the outer surface of the core.

19. (Currently Amended) The method of claim 16 in which the coating [step is] steps are accomplished by spin coating.

20-21. (Canceled)

22. (Original) The method of claim 16 in which the perfluorocyclobutyl-based copolymer composition is applied to the substrate in a solution having at least about 60% solids by weight.

23. (Original) The method of claim 16 in which the perfluorocyclobutyl-based copolymer composition is applied to the substrate in a solution having at least about 70% solids by weight.

24. (Currently Amended) The method of claim 16 in which the cured first film comprises a thickness of at least about 1 micron.

25. (Currently Amended) The method of claim 16 in which the cured first film comprises a thickness of at least about 2 microns.

26. (Currently Amended) The method of claim 16 in which the cured first film comprises a thickness of at least about 3 microns.

27. (Canceled)

28. (Currently Amended) A method of making an optical device, comprising:
providing a first perfluorocyclobutyl-based copolymer composition,
spin coating the first perfluorocyclobutyl-based copolymer composition upon a substrate to form a first film, wherein the first film forms a substantially transparent polymeric core,

providing a second perfluorocyclobutyl-based copolymer composition comprising a second perfluorocyclobutyl-based copolymer different than the first perfluorocyclobutyl-based copolymer ~~composition~~, and

spin coating the second perfluorocyclobutyl-based copolymer composition upon the first film to form a second film, wherein the second film forms a polymeric clad.

29. (Currently Amended) An optical device constructed by the method of:

(a) providing a perfluorocyclobutyl-based copolymer composition having a solids content of greater than 50%,

(b) spin coating the perfluorocyclobutyl-based copolymer composition upon a substrate to form a first film, wherein the first film forms a core for an optical device having a cured film thickness of at least about 0.6 microns, and

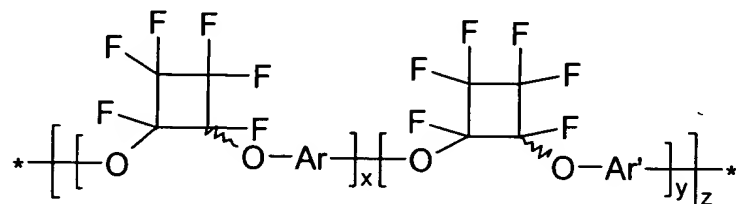
(c) spin coating a second composition on the outer surface of the first film to form a second film, in which the second film is a clad of the optical device.

30-35. (Canceled)

36. (Previously Presented) The method of claim 16, wherein the thickness of the thermoset film is between about 10 and about 50 microns.

37. (Previously Presented) The method of claim 28, wherein the first film and the second film are each about at least about 10 microns thick.

38. (Previously Presented) The method of claim 28, wherein the first and second copolymer compositions comprise perfluorocyclobutyl-based copolymers having the structural formula:



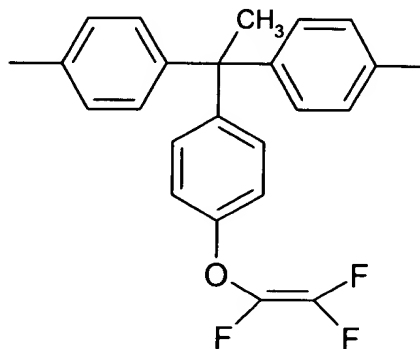
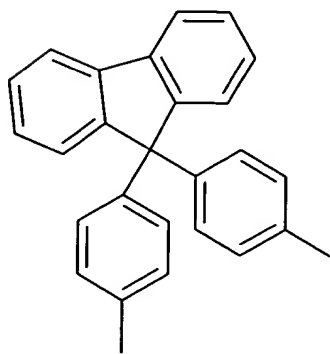
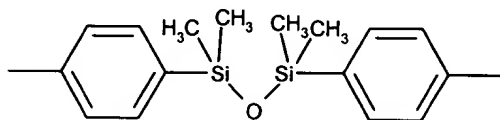
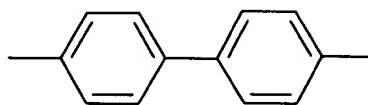
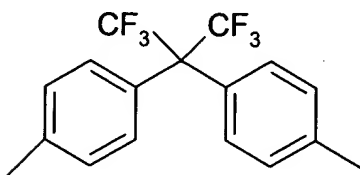
wherein Ar does not equal Ar',

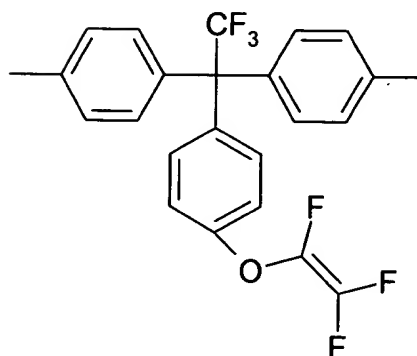
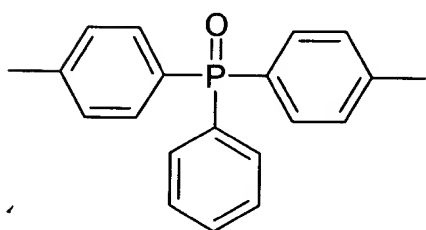
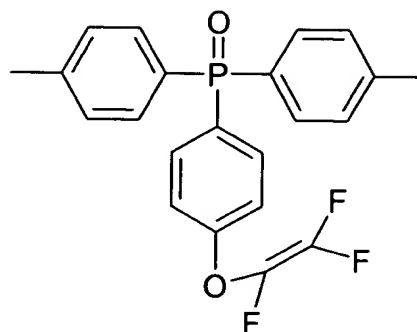
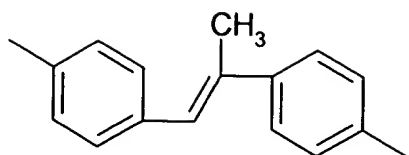
wherein z is greater than or equal to 2, and

wherein x and y each are greater than or equal to 1, respectively.

39. (Previously Presented) The method of claim 38, wherein at least one of Ar or Ar' is a trifluorovinyl aromatic ether.

40. (Previously Presented) The method of claim 38, wherein the Ar and the Ar' groups each comprise substituted or nonsubstituted aryls selected from the group consisting of:





Cont.

, and

41. (Currently Amended) The optical device of claim 29, [the method of constructing the optical device further comprising forming a second film on the core,] wherein the second film ~~comprising~~ comprises a second thermoset perfluorocyclobutyl-based copolymer, wherein the second film is a clad for the optical device having a cured film thickness of at least about 0.6 microns.

42. (Previously Presented) The optical device of claim 41, wherein the first film and the second film each have a thickness of at least about 5 microns.

43. (Previously Presented) The optical device of claim 41, wherein the first film and the second film each have a thickness of at least about 10 microns.

44. (Previously Presented) The optical device of claim 41, wherein the first film and the second film each have a thickness between about 10 and about 50 microns.

45-47. (Canceled)